PEACE RIVER PULP COMPANY

A Division of
Daishowa Canada Co. Ltd.
Peace River, Alberta

Position Paper on the Control of Chlorinated Organic Compounds

June, 1989

DAISHOWA CANADA CO. LTD.

Telephone (604) 689-1919
Telex 04-53483
Fax (604) 689-2853

Box 11595
Suite 2440 - 650 West Georgia Street
Vancouver, B.C., Canada V6B 4N8

June, 1989

SUMMARY

Alberta Environment's mandate is to achieve the protection, improvement and wise use of its environment, now and in the future. Daishowa Canada fully concur with these goals and are committed to work with the Province to ensure that the environment is protected.

The purpose of this submission is to assess and establish that the Peace River Pulp Company mill design will, based on its Permit to Construct guidelines on chlorinated organic compound discharge levels, not only comply with the latest goals of Alberta Environment but also meet or do better than those levels now being proposed by other environmental jurisdictions of the major pulp producing provinces/countries.

The Peace River mill is a world class facility, utilizing the latest state-of-the-art processes and equipment in order to comply with its permit levels. The current mill is designed and will be capable of achieving chlorinated organic compound discharges at levels equal to or lower than the published and targeted standards for Swedish mills and significantly lower than the published standards for mills in Ontario and even the purported "toughest standards in Canada" recently announced by the Province of British Columbia. Sweden, with more than twenty (20) kraft pulp mills, have been instrumental in establishing very stringent water and air discharge levels. For example, the levels of chlorinated organics has been regulated by the Swedish Government on a site specific basis since 1983. The Canadian provinces with major pulp and paper facilities, Ontario and

British Columbia, have recently announced regulations for the discharge of chlorinated organics. The regulations are summarized below:

H.A. Simons, who are recognized as one of the world's most experienced pulp mill consultants, have been retained to review the current mill design and report on the expected discharge levels of chlorinated organics with the mill effluent. This review established the following discharge levels:

Sweden:	Monthly or Annual Average
1988 - 89	1.5 - 2.0 kg/tonne TOCl (2.0 - 2.6 as AOX)
1990 - 92	1.2 - 1.5 kg/tonne TOCl (1.6 - 2.0 as AOX)

Ontario:	30 Day Rolling Average
1991	2.5 kg/tonne AOX
1993	1.5 kg/tonne AOX

British Columbia:	30 Day Average
1991	2.5 kg/tonne AOX
1994	1.5 kg/tonne AOX

PEACE RIVER MILL DESIGN

The Peace River mill design was based on an extensive review of modern kraft mill operations worldwide. The mill was designed to operate with oxygen delignification, high chlorine dioxide substitution and a continuous digester which incorporates provision for extended delignification cooking. As a result of recent disussions with Alberta Environment the Peace River mill has decided to complete its commitment to meet the Alberta Standards by installing the remaining components so that the extended delignification system will be available for the testing and commissioning period. The projected discharges of chlorinated organics from the Peace River mill are summarized below:

Wood Furnish	Typical Month Average AOX-kg/tonne of Pulp
Hardwood - 100%	1.1
HW 70%/SW 30% - Mill Design	1.4
HW 50%/SW 50%	1.6
Softwood - 100%	2.1

A comparison of the projected monthly average AOX discharge level for the Peace River mill and published and/or targeted standards in Sweden, Ontario and British Columbia is attached as Figure 1 in Appendices.

ENHANCEMENT PROGRAM TO CONTROL THE DISCHARGE OF CHLORINATED ORGANIC COMPOUNDS

In addition to already having incorporated "leading edge technology" to ensure compliance with its permit levels, Peace River Pulp Company have retained H.A. Simons to review and develop a program to identify options which may possibly further reduce the discharge of chlorinated organic compounds.

Additional information and performance data on discharge levels of chlorinated organics have been published subsequent to the decision to proceed with the Peace River project.

This latest information has been reviewed and the following options to possibly further reduce the discharge of chlorinated organics are now being pursued unless superceded by superior future methods.

1. Increased chlorine dioxide substitution at the chlorination stage of the bleach plant for softwood operation.

2. Increased chlorine dioxide substitution at the chlorination stage of the bleach plant for hardwood operation.

In addition to the above, the mill will continue to also study other enhancement methods.

The feasibility of adopting either of the above options is subject to detailed review of the equipment selected for the Peace River mill and actual mill performance and/or mill trials prior to final decision to proceed.

An overview of the Peace River mill process design, and schematics of the extended delignification digester and high chlorine dioxide substitution systems, are attached in Appendices.

APPENDICES

Fig. 1

Comparison of Monthly Average

AOX Discharge

Fig. 1

COMPARISON OF AVERAGE MONTHLY AOX DISCHARGE LEVELS TO THE RECEIVING WATER

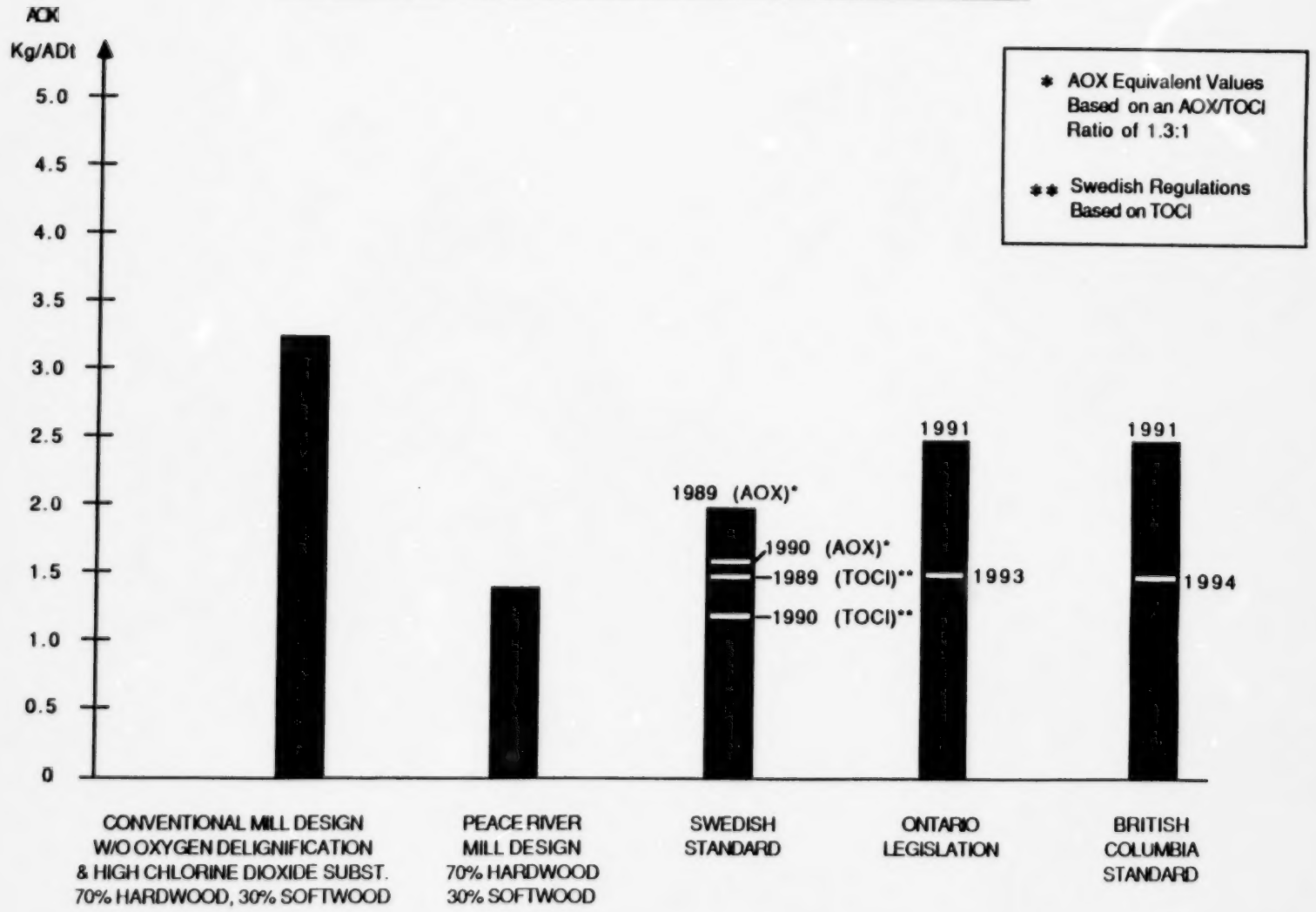
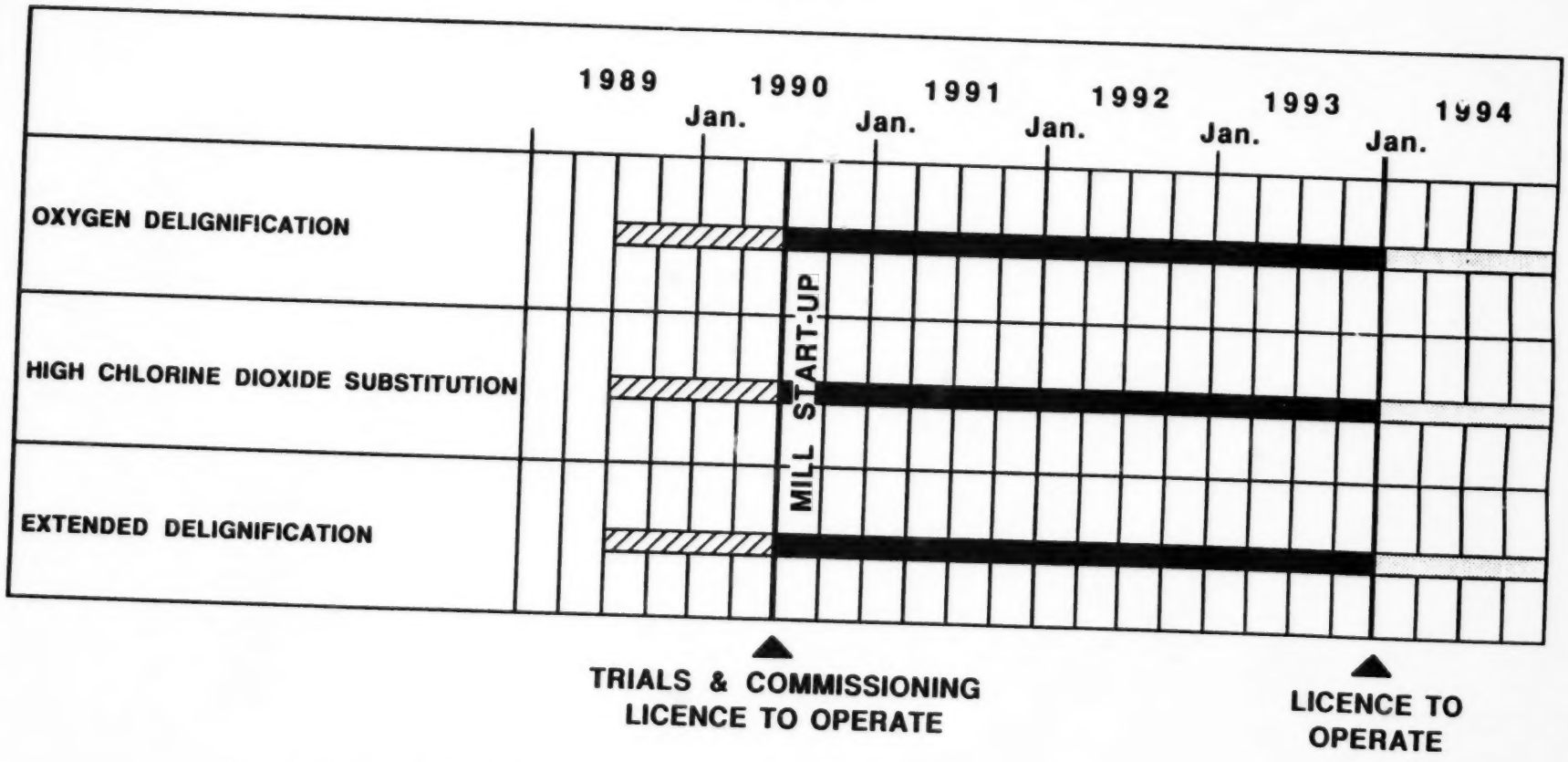


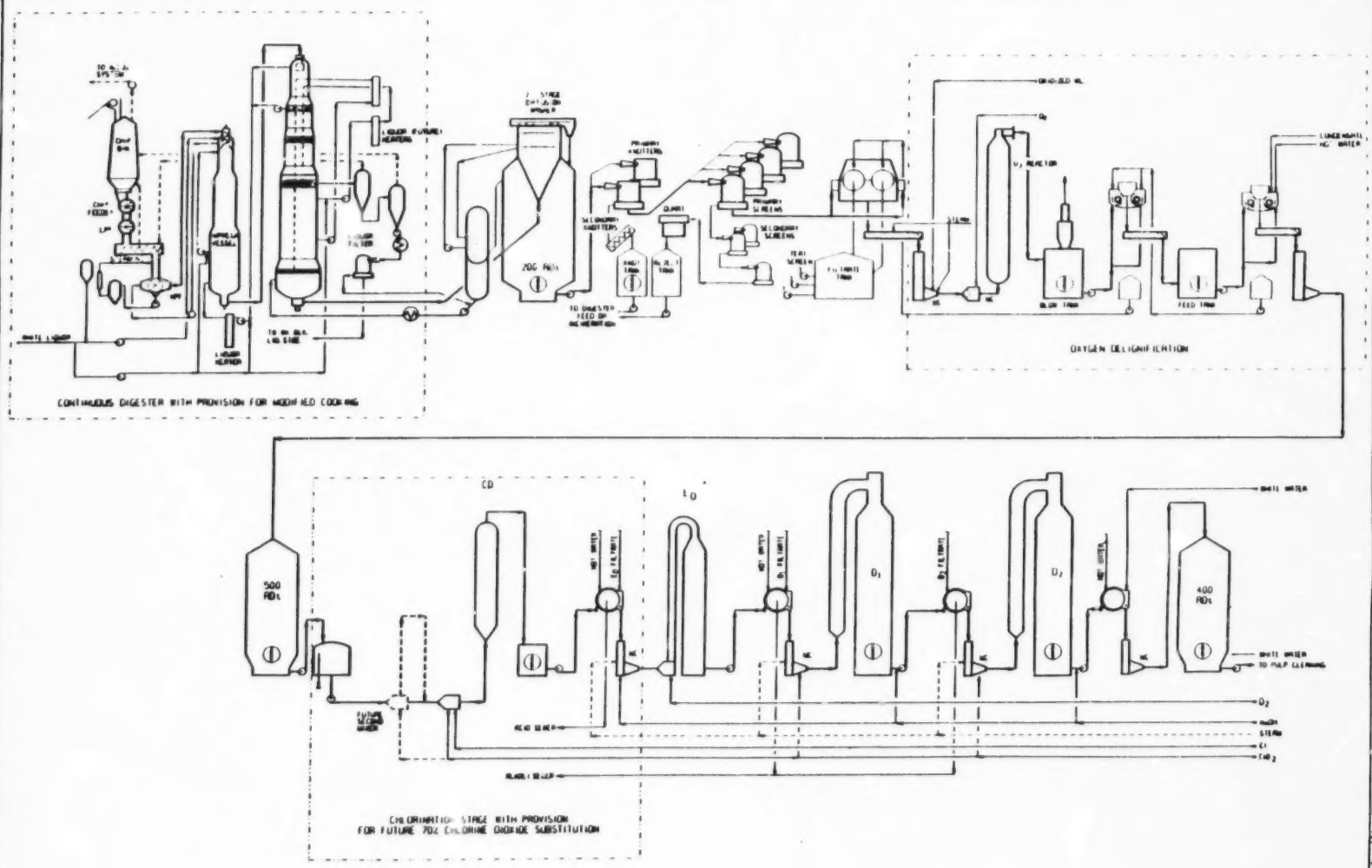
Fig. 2

Schedule

Fig. 2
SCHEDULE

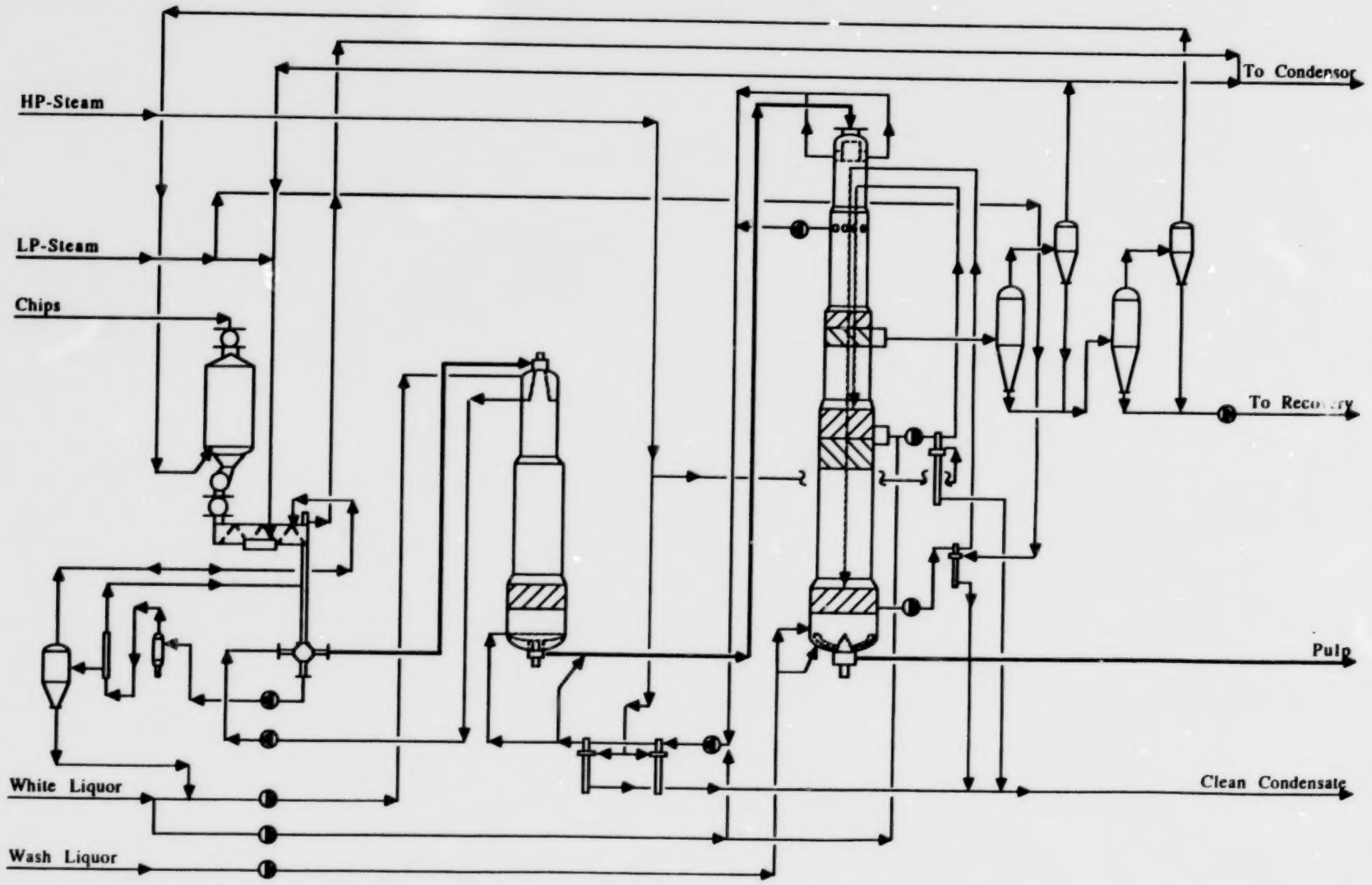


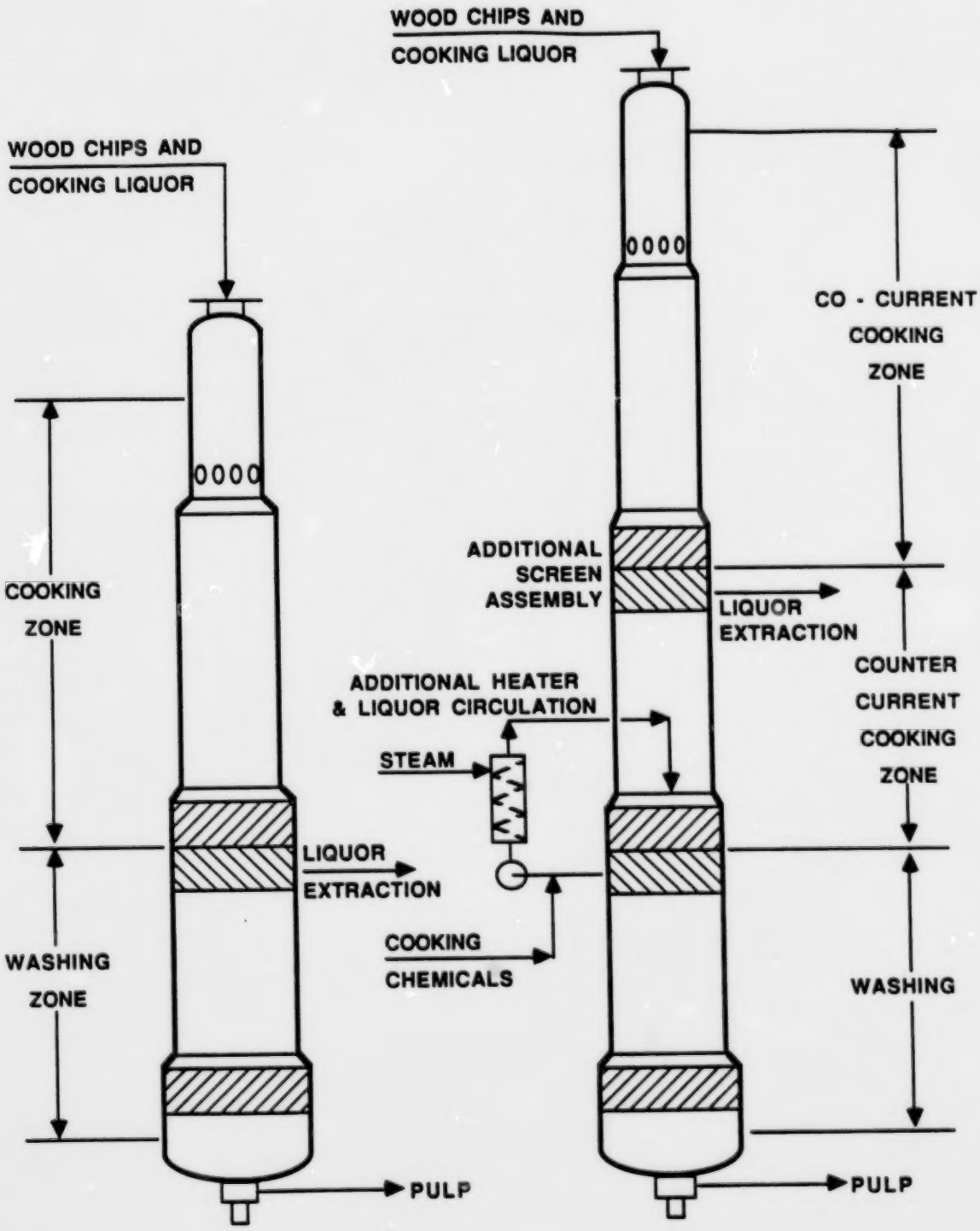
Illustrations



GENERAL FLOW DIAGRAM

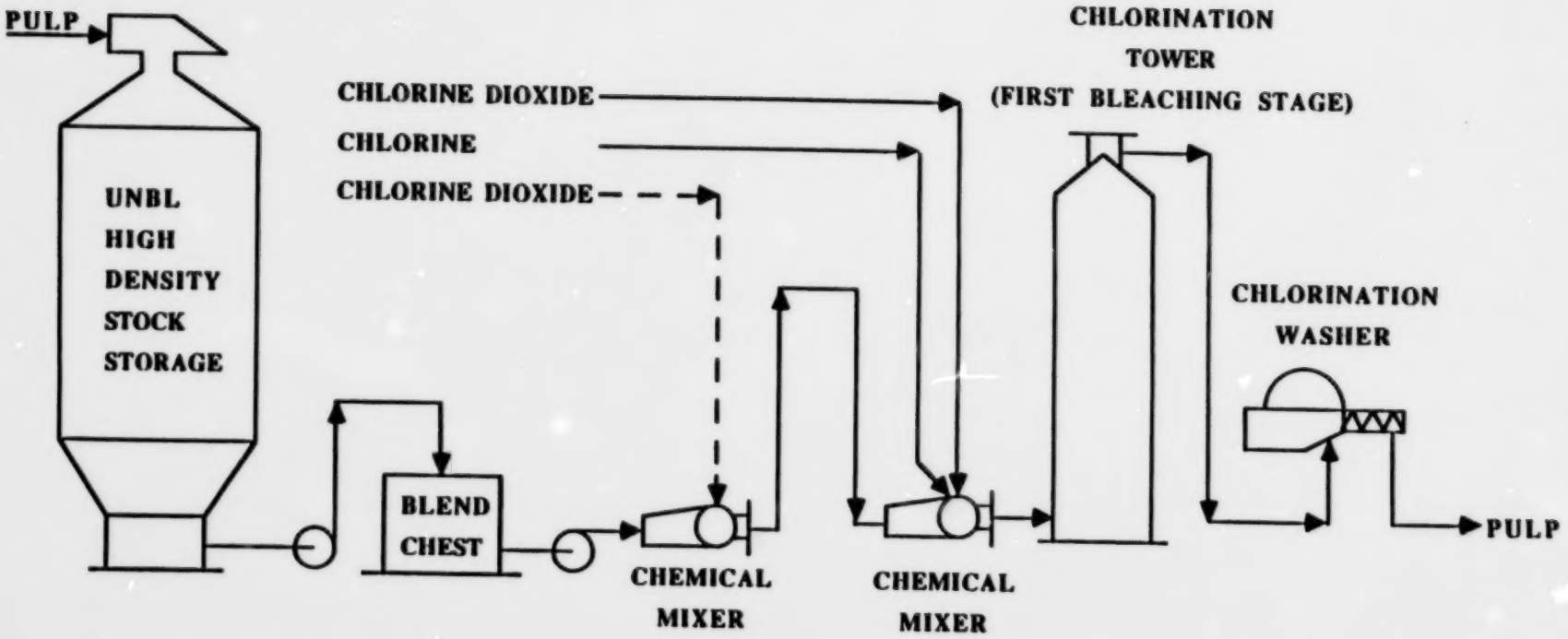
TWO VESSEL HYDRAULIC TYPE DIGESTER
EXTENDED DELIGNIFICATION COOKING





STANDARD DIGESTER

EXTENDED DELIGNIFICATION DIGESTER



HIGH CHLORINE DIOXIDE SUBSTITUTION